

ABSTRACT

An optical sensor (10) that provides for concurrent pressure and temperature measurements at substantially the same location includes at least one launch fiber (22) and at least one temperature sensitive material (52) having a refractive index that changes with a change in temperature. The launch fiber and temperature sensitive material are spaced from each other across a gap (21) having length (L). A reflecting fiber (26) can be provided adjacent the temperature sensitive material. The optical sensor (10) also includes a sealed cavity (20). The launch fiber (22) and reflecting fiber (26) can be attached to the tube and at least partially disposed within the cavity. Changes in pressure change the length (L) of the gap (21).